Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A composite magnetic head comprising:

a magnetoresistive head comprising:

a lower magnetic shield disposed above [[on]] a substrate;

a lower gap layer;

a first ferromagnetic layer;

a non-magnetic layer;

a second ferromagnetic layer;

an anti-ferromagnetic layer having non-magnetic regions on both [[the]] ends thereof;

first electrode layers disposed respectively on the non-magnetic regions of the anti-ferromagnetic layer;

magnetic domain control layers disposed respectively on the ends of a stack of layers consisting of ~~the lower magnetic shield, the lower gap layer,~~ the first ferromagnetic layer, the non-magnetic layer, the second ferromagnetic layer, the anti-ferromagnetic layer, and the first electrode layers;

second electrode layers disposed above ~~respectively on~~ the magnetic domain control layers; and

an upper gap layer ~~magnetic shield~~ disposed above [[on]] the second electrode layers and the stack of layers ~~by way of an upper gap layer~~; [[and]]

an upper magnetic shield disposed above the upper gap layer; and

an inductive magnetic head disposed above [[on]] the magnetoresistive head via ~~by way of~~ an insulation layer,

wherein a width between the non-magnetic regions of the anti-ferromagnetic layer is smaller than a track width of the first ferromagnetic layer.

2. (currently amended) A composite magnetic head as defined in claim 1, wherein the non-magnetic regions of both ends ~~region~~ of the anti-ferromagnetic layer are [[is]] formed by implanting impurities into the anti-ferromagnetic material.

3. (currently amended) A composite magnetic head as defined in claim 1, wherein a width of each of the first electrode layers ~~layer~~ is 20 nm or less.

4. (currently amended) A composite magnetic head as defined in claim 1, wherein the first and the second electrode layers ~~layer~~ contain one or more of elements of at least Au, Ta, W, Ru, Rh, Cu, Ti, Ag, Pt, Pd, Cr, In, Ir, Nb and Zr.

5. (currently amended) A composite magnetic head as defined in claim 1, wherein [[a]] soft magnetic layers are ~~layer is~~ disposed between the magnetic domain control layers ~~layer~~ and the second electrode layers ~~layer~~.

6. (currently amended) A composite magnetic head as defined in claim 1, wherein [[a]] crystal orientation underlying layers are ~~layer is~~ disposed below the magnetic domain control layers ~~layer~~.

7. (withdrawn) A composite magnetic head comprising:

a magnetoresistive head comprising:

a lower magnetic shield disposed on a substrate;

a lower gap layer;

a first ferromagnetic layer;

a non-magnetic layer;

a second ferromagnetic layer;

an anti-ferromagnetic layer having both ends whose width is narrower than that of the second ferromagnetic layer;

first electrode layers disposed on the second ferromagnetic layer at both the ends of the anti-ferromagnetic layer;

magnetic domain control layers disposed respectively on the ends of a stack of layers consisting of the lower magnetic shield, the lower gap layer, the first ferromagnetic

layer, the non-magnetic layer, the second ferromagnetic layer, the anti-ferromagnetic layer, and the first electrode layers;

second electrode layers disposed respectively on the magnetic domain control layers; and

an upper magnetic shield disposed on the second electrode layers and the stack of layers by way of an upper gap layer; and

an inductive magnetic head disposed on the magnetoresistive head by way of an insulation layer.

8. (withdrawn) A composite magnetic head as defined in claim 7, wherein a width of the first electrode layer is 20 nm or less.

9. (withdrawn) A composite magnetic head as defined in claim 7, wherein the first and the second electrode layer contain one or more of elements of at least Au, Ta, W, Ru, Rh, Cu, Ti, Ag, Pt, Pd, Cr, In, Ir, Nb and Zr.

10. (withdrawn) A composite magnetic head as defined in claim 7, wherein a soft magnetic layer is disposed between the domain control layer and the second electrode layer.

11. (withdrawn) A composite magnetic head as defined in claim 7, wherein a crystal orientation underlying layer is disposed below the magnetic domain control layer.

12. (withdrawn) A composite magnetic head comprising:

a magnetoresistive head comprising:

a lower magnetic shield disposed on a substrate;

a lower gap layer;

a first ferromagnetic layer;

a non-magnetic layer;

a second ferromagnetic layer;

an anti-ferromagnetic layer disposed on a central portion other than both ends of the second magnetic layer;

first electrode layers disposed respectively on both ends of the second ferromagnetic layer;

magnetic domain control layers disposed respectively on the ends of a stack of layers consisting of the lower magnetic shield, the lower gap layer, the first ferromagnetic layer, the non-magnetic layer, the second ferromagnetic layer, the anti-ferromagnetic layer, and the first electrode layers;

second electrode layers disposed respectively on the magnetic domain control layers; and

an upper magnetic shield disposed on the second electrode layers and the stack of layers by way of an upper gap layer; and

an inductive magnetic head disposed on the magnetoresistive head by way of an insulation layer.

13. (withdrawn) A composite magnetic head as defined in claim 12, wherein a width of the first electrode layer is 20 nm or less.

14. (withdrawn) A composite magnetic head as defined in claim 12, wherein the first and the second electrode layer contain one or more of elements of at least Au, Ta, W, Ru, Rh, Cu, Ti, Ag, Pt, Pd, Cr, In, Ir, Nb and Zr.

15. (withdrawn) A composite magnetic head as defined in claim 12, wherein a soft magnetic layer is disposed between the domain control layer and the second electrode layer.

16. (withdrawn) A composite magnetic head as defined in claim 12, wherein a crystal orientation underlying layer is disposed below the magnetic domain control layer.

17. (new) A composite magnetic head as defined in claim 1,

wherein the first ferromagnetic layer is provided between the lower gap layer and the non-magnetic layer, and

wherein the second ferromagnetic layer is provided between the anti-ferromagnetic layer and the non-magnetic layer.

18. (new) A composite magnetic head as defined in claim 1,

wherein the first ferromagnetic layer is a free layer, and

wherein the second ferromagnetic layer is in contact with the anti-ferromagnetic layer.

19. (new) A magnetic head comprising:

a substrate;

a free layer provided above the substrate;

a non-magnetic layer provided above the free layer;

a ferromagnetic layer provided above the non-magnetic layer; and

an anti-ferromagnetic layer adjacent to the ferromagnetic layer,

wherein the anti-ferromagnetic layer has a non-magnetic portion and a magnetic portion,

wherein a width in a track with direction of the free layer is larger than a width in the track width direction of the magnetic portion.

20. (new) The magnetic head as defined in claim 19, further comprising:

a pair of electrodes provided above the non-magnetic region of the anti-ferromagnetic layer;

magnetic domain control layers provided on ends of the free layer, the non-magnetic layer, the ferromagnetic layer, the anti-ferromagnetic layer, and the pair of electrodes,

wherein the non-magnetic portion is formed by eliminating magnetic properties of the anti-ferromagnetic layer.